Data Awal Referensi Facility Network Model

Penulis	Area Aplikasi	Judul	Structure	Uncertainly	Methods	Constrain	Decision Variable	Keterangan Lainnya
Iraj et al., 2024	Facility Network Model	Presenting a two-echelon multi-objective supply chain model considering the expiration date of products and solving it by applying Multi objective decision Making (MODM)	Facility network model, two echelon (Manufactur-Distributor), perishable item, multi product, deterministic model, constant production rate	Demand and transportation time	Optimization, mixed integer non-linear mathematical model, Mixed Integer Nonlinear Programming (MINLP) problem	warehouse and transport constrain	Economic order quantity for product i	Multi objective (minimizing waste due to expired products, reducing costs, maximizing customer satisfaction by ensuring fresh products, improving sustainability), Taktis-Operational
Garrido et al., 2025	Facility Network Model	A multi-echelon globalized agro-industrial supply chain under conditions of uncertainty: A two-stage fuzzy-possibilistic mixed-integer linear programming model	Facility network model, Multi echelon (crops, production facilities, cross-docking points, and end-customers), perishable item, multi product, deterministic model, constant production rate	Parameter/ Data	Optimization, two-stage fuzzy-possibilistic mixed-integer linear programming (FP-MILP) model, a fuzzy-MILP approach	capacity di setiap rantai	Quantity dari produk yang diangkut disepanjang SC	Minimasi total jarak tempuh atau panjang rantai pasok , Strategic decision
Mosallanezhad et al., 2023	Facility Network Model	Metaheuristic optimizers to solve multi-echelon sustainable fresh seafood supply	Facility network model, Closed loop SC, Multi echelon (Farm, DC, factories, retailer, customer,	-	Optimization, Mixed Integer Linear Programming, Metaheuristic,	capacity di setiap rantai	Quantity dari produk yang diangkut disepanjang SC, penentuan lokasi	Multi objective (Minimasi cost and waste), Strategic decision

Penulis	Area Aplikasi	Judul	Structure	Uncertainly	Methods	Constrain	Decision Variable	Keterangan Lainnya
		chain network design problem: A case of shrimp products	waste processing plant), perishable item, multi product, deterministic model		Tabu search		DC	
Sebatjane et al., 2024	Facility Network Model	Sustainable inventory models for a three-echelon food supply chain with growing items and price-and carbon emissions-dependent demand under different emissions regulations	Green Supply Chain Network Design, three ecelon (farming, processing, retail), carbon emission, stochastic model	Demand that depends on price and carbon emission	Optimization, inventory models for a three-echelon food supply chain with growing items while considering the impact of carbon emissions, Analytical model	Carbon emission di setiap rantai	Cycle time setiap chain dan processor and farmer order quantity	Maksimasi SC profit, Tactical decision
Svoboda and Minner, 2025	Facility Network Model	A data-driven approach for strategic inventory placement in multiechelon supply networks	Facility network model, multi echelon, multi-period, data-driven inventory control, stochastic model	Demand	Optimization, guaranteed-service model (GSM), mixed integer linear programming (MILP), The data-driven multi-echelon model,	Biaya, kapasitas, Service level requirements	Jumlah base stock disetiap rantai pasok, penentuan lokasi fasilitas, jumlah produk yang dikirim ke setiap rantai pasok yang ada dibawahnya (downstream)	Minimasi SC cost, Strategic-Tactical decision
Dávila etala., 2025	Facility Networ	Optimizing a partial vertically	Partial vertically integrated supply	-	Optimization, mixed-integer	Kapasitas dan	Leader (alokasi, kapasitas,	Minimasi total waiting times for

Penulis	Area Aplikasi	Judul	Structure	Uncertainly	Methods	Constrain	Decision Variable	Keterangan Lainnya
	k Model	integrated supply chain with hierarchical internal coordination: Bilevel model and solution algorithms	chains (PVI-SCs), n-customer, n-plants, n-supplier, n-DC, different types of machine, different types of products, different types of part of different product		nonlinear bilevel programming model, customized Branch & Bound algorithm, effective and efficient nested iterated local search algorithm	demand	produksi, Harga), Follower (Jumlah produksi, pasokan material, total biaya, alokasi)	customers to receive their purchased products

Data Awal Referensi Sourcing Model

Penulis	Area Aplikasi	Judul	Structure	Uncertainly	Methods	Constrain	Decision Variable	Keterangan Lainnya
Chen et al., 2025	Sourcing	Integrating environmental considerations and resilience in material sourcing for construction projects: A two-stage stochastic programming model	Local sourcing, Single project, back-up sourcing, multi supplier, multi item, Transhipment modes, Probabilistic model	Supply capacities, demand, multiple uncertain events	Optimization, Robust Optimization, Two-stage stochastic programming, Bayesian network, Machine learning	Kapasitas, biaya, emisi,	Penentuan pemasok, alokasi material	Minimasi Cost, Strategic-Tactical Decision (supplier selections, material ordering, inventory management, and material trans-shipments)
Hayati et al., 2025	Sourcing	An integrated analytics model for supplier selection and order allocation with machine learning and multi-criteria optimization	Sourcing, Multi-supplier, multi-item, and multi-period, Stochastic model	Raw material prices, delivery times, and shifting patient demands	Optimization, Fuzzy probabilistic multi-objective mixed integer linear programming model, , Machine learning, Fuzzy supplier evaluation model based on the Best-Worst Method (BWM)-Additive Ratio	kapasitas, data-driven constrain	Penentuan pemasok, alokasi pesanan	Minimasi cost, probabilistic defects, and environmental impacts and maximize the total purchase value of the order allocation, Tactical Decision (Supplier selection and Order Allocation)

Penulis	Area Aplikasi	Judul	Structure	Uncertainly	Methods	Constrain	Decision Variable	Keterangan Lainnya
					Assessment (ARAS) method			
Miyangaskary et al., 2025	Sourcing	A multi-objective optimization model of a closed-loop supply chain for supplier selection and order allocation under uncertainty: A case study of retail stores for protein products	Sourcing, Multi-supplier, multi-item, and multi-period environment, Stochastic model	Demand, price, costs, return rate, quality, capacity, and order amount	Optimization, Fully fuzzy multi-objective model, Fuzzy Multi-Objective Programming	Keseimbangan aliran forward dan reverse supply chain, biaya, emisi	Penentuan pemasok, alokasi pesanan	Minimasi costs and quantity of waste and maximizing profit, customer satisfaction, quality, and profit margin, Strategic-Tactical Decision (Supplier selection and Order Allocation)
Chen et al., 2025	Sourcing	A comprehensive multi-stage decision-making model for supplier selection and order allocation approach in the digital economy	Sourcing, Multi-item, Multi-supplier, Single-period, Deterministic model	-	Optimization, A hybrid supplier selection and order allocation model, FMCDM, CPT, AGE-MOEA-II, Topsis	Kapasitas, biaya, sustainability	Penentuan pemasok, alokasi pesanan	Minimasi Cost, Sustainability, Leadtime, Tactical Decision (Supplier selection and Order Allocation)
Wang et al., 2025	Sourcing	A multi-objective lot sizing	Sourcing, Multi-period, Multi item,	Dynamic Demand	Optimization, multi-objective lot sizing	Kapasitas, biaya, emisi karbon,	Penentuan pemasok, alokasi	Optimasi multi-period procurement

Penulis	Area Aplikasi	Judul	Structure	Uncertainly	Methods	Constrain	Decision Variable	Keterangan Lainnya
		procurement model for multi-period cold chain management including supplier and carrier selection	Multi carrier, Perishable product, carbon footprint		procurement (LSP) model, Heuristic algorithm	leadtime product	pesanan, pemilihan carrier, level persediaan di tiap rantai pasok	plans and order allocation, Minimasi total costs and carbon emissions, Tactical Decision (Supplier selection, Carrier selection, and Order Allocation)

Data Awal Referensi Planning Model

Penulis	Area Aplikasi	Judul	Structure	Uncertainly	Methods	Constrain	Decision Variable	Keterangan Lainnya
Gong et al., 2023	Capacity Planning	On the effects of airport capacity expansion under responsive airlines and elastic passenger demand	Demand planning, Airline market structure, Competition (monopoly and oligopoly), airport expansion, flight scheduling, capacity investment, airfare decision,	Demand	Stackelberg game model	Capacity dan Market Structure	kapasitas, airport charge, traffic, airfare	Airport: maximize profit/social welfare, Airlines: maximize profit, Passengers: minimize travel cost, Strategic decision
Yang et al., 2025	Capacity planning	Adaptive multi-objective Bayesian optimization approach for capacity planning of the interconnected offshore wind farms	Capacity planning for offshore wind farm, multi-komponen (OWFs + baterai + hidrogen), Interconnected energy systems, Hydrogen production, Energy storage	Wind speed	Optimization, A collaborative capacity planning model, adaptive multi-objective Bayesian optimization (AMBO) algorithm	Operational limits, power flow, balance, BESS dynamics, N−1 contingency	Kapasitas OWF, Kabel, Hidrogen, BESS	Minimasi cost, Minimum Renewable energy sources consumed, Maksimasi reliability, Strategic decision (Capacity planning)
Wu et al., 2024	Capacity planning	A two-layer planning method for location and capacity determination of public electric vehicle charging	Location and capacity determination, public electric vehicle charging stations, two-layer planning method (location of charging station, number of charging	Demand	Optimization, Gaussian mixture model (GMM) , Fuzzy logic-based charging probability model	Kapasitas, demand, jarak, biaya	Pemilihan lokasi dan kapasitas charging tiap lokasi	Multi objective (Minimasi biaya, maksimasi utilitas pengguna, optimasi lokasi dan kapasitas)

Penulis	Area Aplikasi	Judul	Structure	Uncertainly	Methods	Constrain	Decision Variable	Keterangan Lainnya
		stations	piles each station)					
Vié et al., 2025	Production planning and distribution scheduling	A production and distribution scheduling matheuristic for reducing supply chain variations	Production and distribution scheduling, Multi-echelon, Cross-docking, multi-products	Demand and leadtime, shelf capacity for each products	Optimization, Integer linear model, Multi objective linear programming, Lexicographic optimization, Local search with multiple neighborhoods, Pull, Push and MNDLS	Production capacity constraint, Inventory balance constraint,Lead time distribution constraint, No storage at DCB constraint, Demand fulfillment constraint	Jumlah produksi, jumlah pengiriman antar echelon, inventory level per periode, jadwal pengiriman	Minimasi shortage, Menjaga kapasitas produksi tetap stabil (tidak overproduction dan under production), Minimasi penggunaan backroom, optimalisasi shelf, Tactical-Operational decision
Chamani et al., 2025	Production planning	Modeling and Solving Production Planning in a Two-Factories Symbiotic Network with Uncertain Demands	Production planning, lot sizing problem, stochastic model, single item, eco-collaboration between factories, symbiotic network of two factories,Capacitated lot-sizing Two collaborators	Demand	Optimization, two-stage stochastic programming model, Sample Average Approximation (SAA) method, distributionally robust optimization (DRO) model–with a polynomial number of constraints	Kapasitas produksi tiap pabrik, Inventory balance, Symbiotic capacity sharing constraints, Demand satisfaction constraint	Jumlah produksi, jumlah pengiriman antar echelon, inventory level per periode, keterlambatan, kapasitas yang digunakan	Minimasi cost (Tactical Decision)
Jing et al., 2024	Prodction planning and Schedulin	Cloud-edge collaboration composition and	Flexible manufacturing services (FMS), smart industrial	-	Optimization, Cloud Manufacturing Service Cloud-	Resource, QoS, precedence	Service selection and scheduling	Maksimasi quality of service, minimasi cost of

Penulis	Area Aplikasi	Judul	Structure	Uncertainly	Methods	Constrain	Decision Variable	Keterangan Lainnya
	g	scheduling for flexible manufacturing service with a multi-population co-evolutionary algorithm	robot, cloud service		edge Collaboration Composition and Scheduling (CMfg-SCCCS) optimization model, Temporal-dynamic QoS represent model, multi-objective optimization model, CMfg-SCCCS method for FMS, Multi-population co-evolutionary algorithms			the cloud tasks, Minimize the difference between cloud task due time and completion time

Data Awal Referensi Pricing Model

Penulis	Area Aplikasi	Judul	Structure	Uncertainly	Methods	Constrain	Decision Variable	Keterangan Lainnya
Terzi et al., 2025	Inventory and pricing	Integrating lot-sizing and pricing decisions in multi-channel markets with discrete menus of prices	Retailing, Inventory and Pricing strategy, multi-channel, stochastic model, single item, continuous horizon,	Demand, price	Optimization, mixed-integer linear programming (MILP) model, mixed-integer non-linear programming (MINLP) model, two MILP-based heuristics, Fix-and Relax and Double-Fix-and-Relax methods	Capacity	production quantity, pemilihan channel, kapan produksi, harga yang dipilih pada channel ke i	Maksimasi profit
Ren et al., 2025	Pricing	A novel multi-objective Stackelberg game model for multi-energy dynamic pricing and flexible scheduling in distributed multi-energy system	Distributed multi-energy system (DMES), multi-energy management and pricing, Carbon trading	Variabilitas produksi energi terbarukan	Stackelberg multi-objektif, algoritma evolusi multi-objektif NSGA-III, a complex nonlinear problem with bi-level structure	Energy balance, carbon cap, capacity	Pricing, scheduling, carbon trading, demand response	Leader (Maksimisasi profit, minimasi konsumsi energi dan emisi karbon), Follower (Maksimasi surplus konsumsi energy) Minimasi

Penulis	Area Aplikasi	Judul	Structure	Uncertainly	Methods	Constrain	Decision Variable	Keterangan Lainnya
								konsumsi energi pada sistem secara keseluruhan Minimasi emisi karbon dari sistem DMES
Tran et al., 2024	Pricing	Optimal pricing for dual-channel retailing with stochastic attraction demand model	Retailing, Pricing strategy, dual channel SC (online and offline), stochastic model, single item, limited store capacity,	Demand, Price	Optimization, Analitics, Dual-channel stochastic attraction demand model	Demand balance, stochastic demand, quantity offline	Pricing in Dual Channel (offline and Online)	Maksimasi profit (Tactical Decision)
Kavoosi et al., 2025	Inventory and pricing	Dynamic pricing and inventory control of perishable products by a deep reinforcement learning algorithm	Inventory policy, Dynamic, Perishable item, Single-supplier, Single-retailer, Multi-item, Continuous review, VMI, Stochastic	Demand, age of product	Agent based on proximal policy optimization, unified deep reinforcement learning (DRL) framework for dynamic pricing and perishables inventory control in a vendor	balancing shelflife constraints, inventory	Pricing, Order quantity, Inventory disposal	Minimasi Cost

Penulis	Area Aplikasi	Judul	Structure	Uncertainly	Methods	Constrain	Decision Variable	Keterangan Lainnya
			model		managed environment			

Data Awal Referensi Distribution Model

Penulis	Area Aplikasi	Judul	Structure	Uncertainly	Methods	Constrain	Decision Variable	Keterangan Lainnya
Li et al., 2025	Distribution model	Warehouse-distribution integration routing problem under real-world transport conditions with multiple time windows and variable loading efficiency	Routing Problem,Vehicle routing problem with multiple time windows (VRPMTW), warehouse-distribution integration, Multi channel SC, Multiple time windows, variable loading, multiple warehouses, and half-open routing	-	Optimization, Mixed Integer Linear Programming (MILP) model, Two-stage heuristic algorithm, a multi-greedy method, a Variable Neighborhood Search (VNS) method, Warehouse-distribution integration routing problem	multiple-time-window and vehicle capacity	Route	Minimasi total traveling time and goods loading time for delivery vehicles
Sadeghi et al., 2019	Distribution model	Fuzzy bi-objective model for a supply chain network design problem considering stochastic transportation leadtime	Network design, Supply Chain Network Design (SCND) problem, stochastic transportation leadtime, dua Pabrik, m-DC, n-customer	Transportation leadtime	Optimization, Network model, Fuzzy Stochastic Mixed-integer Non-linear Programming	DC's capacity	Flow of product, Probability of earliness in transporting products, pemilihan lokasi DC	Maksimasi profit dan minimasi risiko probabilitas keterlambatan (tardiness)

Penulis	Area Aplikasi	Judul	Structure	Uncertainly	Methods	Constrain	Decision Variable	Keterangan Lainnya
Malekı et al., 2024	Distribution model	Optimal distribution and waste management of Covid-19 vaccines from vaccination centers' satisfaction perspective – A fuzzy time window-based VRP	Distribution and waste management, three echelons (Manufacturing plants, distribution centers, and TVCs), multi-period, multi-product, location-allocation model considering capacitated and multi-depot VRP with heterogeneous vehicles, Fuzzy time windows	Supply	Optimization, mixed-integer non-linear programming (MINLP) model, the augmented ε-constraint	Capacity (DC, landfill for waste, recicling center, vehicle for waste)	Pemilihan lokasi (DC, landfill center, recycling center, collection center)	Multi objective (Minimasi total cost dalam sistem, Memaksimasi total pekerjaan yang tercipta di jaringan distribusi, Maksimasi SL tempat vaksinasi covid)
Mesa et al., 2025	Distribution model	Machine-learning component for multi-start metaheuristics to solve the capacitated vehicle	CVRP, Machine learning, Multi-Start metaheuristics (MSM), Improve the quality of the Solution	-	Optimization, Metaheuristic, Machine learning, Multi-Start metaheuristics (MSM), initial-solution classification (ISC), greedy randomized	Vehicle Capacity	Number of customers in each route, average compactness of a route, or number of intersectio	ISC's performance with different local-search algorithms

Penulis	Area Aplikasi	Judul	Structure	Uncertainly	Methods	Constrain	Decision Variable	Keterangan Lainnya
		routing problem			adaptive search procedure (GRASP)		ns between routes	
Rios and Xavier, 2025	Distribution model	Metaheuristic approaches for the stochastic capacitated multi-depot vehicle routing problem with pickup and delivery	Routing problem, stochastic capacitated multi-depot VRP with pickup and delivery (SCMVRPPD), Metaheuristic	Demand and damand location	Optimization, Metaheuristic (Tabu search),Generalized Variable Neighborhood Search (GVNS), Iterated Local Search (ILS-VND) method	Precedence (a pickup must always occur before its associated delivery), time windows, vehicle capacity	Route	Minimize the total travel distance

Data Awal Referensi Closed Loop Model

Penulis	Area Aplikasi	Judul	Structure	Uncertainly	Methods	Constrain	Decision Variable	Keterangan Lainnya
Zhang et al., 2025	Closed loop SaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaC	Construction of a new robust dual-channel supply chain network	Close loop SC, Dual channel, Multi echelon, Multi-suppliers, Multi-manufactu	Transportation cost and demand	Optimization, Mix integer linear programming (MILP) model, Accelerated Benders	Keseimbangan aliran, kapasitas, keputusan pembukaan fasilitas	Keputusan pembukaan fasilitas, alokasi aliran forward & reverse, jumlah produk per	Minimasi total biaya (produksi, transportasi, inventori, reverse

Penulis	Area Aplikasi	Judul	Structure	Uncertainly	Methods	Constrain	Decision Variable	Keterangan Lainnya
		with forward logistics and reverse logistics	rers, Multi-retailers, Multi-customers, Multi(recycling center, disposal center, recovery center, collection center)		decomposition (BD) algorithm		channel (online/offline)	logistics) dalam kondisi terburuk (DRO)
Aiello et al., 2025	Closed loop SC	A sustainable inventory management model for closed loop supply chain involving waste reduction and treatment	Close loop SC, multi echelon, newsvendor model, Waste management, stochastic inventory model	Demand	Optimization, Newsvendor model, waste management optimization models	Keseimbangan aliran dan kapasitas	Order quantity, remanufacture quantity, inventory level, quantity of waste	Minimasi cost (Tactical-Operational)
Mosallane	Closed loop SC	Metaheur	Facility	-	Optimizati	capacity di	Quantity	Multi

Penulis	Area Aplikasi	Judul	Structure	Uncertainly	Methods	Constrain	Decision Variable	Keterangan Lainnya
zhad et al., 2023		istic optimizers to solve multi-echelon sustainable fresh seafood supply chain network design problem: A case of shrimp products	network model, Closed loop SC, Multi echelon (Farm, DC, factories, retailer, customer, waste processing plant), perishable item, multi product, deterministic model		on, Mixed Integer Linear Programming, Metaheuristic, Tabu search	setiap rantai	dari produk yang diangkut disepanjang SC, penentuan lokasi DC	objective (Minimasi cost and waste), Strategic decision

Data Awal Referensi Contract Model

Penulis	Area Aplikasi	Judul	Structure	Uncertainly	Methods	Constrain	Decision Variable	Keterangan Lainnya
Song and Gao, 2018	Contract	Green supply chain game model and analysis under revenue-sharing contract	Contract, Single Supplier, Single retailer, Two echelon, Green product, Revenue sharing contract	-	Game Theory, Revenue-sharing game models (a retailer-led revenuesharing contract game model and a bargaining revenue-sharing contract game model)	Inequality constraint	The greening level, price of the product, the profit of retailer and manufacturer, and the overall profit of the green supply chain	Maksimasi SC profit
Nematollahi et al., 2025	Contract	Win-win contract farming in dual-channel agribusiness supply chains under yield, quality, and price uncertainty	Contract, Dual Channel, Two echelon, Penalty-Incentive based contract	Supply, quality, demand, and price	Game Theory, contract farming model for a dual-channel	Inequality and feasibility constraint	Optimal quantity of fresh product, wholesale price, incentive coefficient	Maksimasi SC profit
Chen et al., 2010	Contract	Coordination mechanism for the supply chain with leadtime consideration	Contract, Profit sharing contract, stochastic price-dependent	Demand, price	Optimization, A two-stage optimization problem, a coordinating contract for a	Capacity and feasibility constraint	Pricing and optimal optimal quantity	Maksimasi SC profit

Penulis	Area Aplikasi	Judul	Structure	Uncertainly	Methods	Constrain	Decision Variable	Keterangan Lainnya
		and price-dependent demand	demand, Single period and Multi-period, Quantity flexibility contract, Centralized system, Stochastic model		two-stage newsvendor model			
Jammernegg et al., 2024	Contract	Risk preferences, newsvendor orders and supply chain coordination using the Mean-CVaR model	Contract, Newsvendor problem, Three echelon (Supplier-wholesaler, buyer), stochastic model	Demand	Optimization, Newsvendor-Mean-CVaR (Conditional Valueat-Risk) model	Value at risk constrain	Order quantity	Maksimasi convex combination antara rata-rata keuntungan (mean of profit) dan CVaR (Conditional Value at Risk) dari keuntungan (atau kerugian)
Gong et al., 2022	Contract	Inventory control policy for perishable	Contract, buyback, continuous	Demand	Optimization, Continuous-time stochastic	-	Optimal order and reorder point	Maksimasi profit

Penulis	Area Aplikasi	Judul	Structure	Uncertainly	Methods	Constrain	Decision Variable	Keterangan Lainnya
		products under a buyback contract and Brownian demands	review inventory policy, two echelon (single supplier and retailer), stochastic model		inventory model, Brownian demand with (s, S) policy and buyback contract			